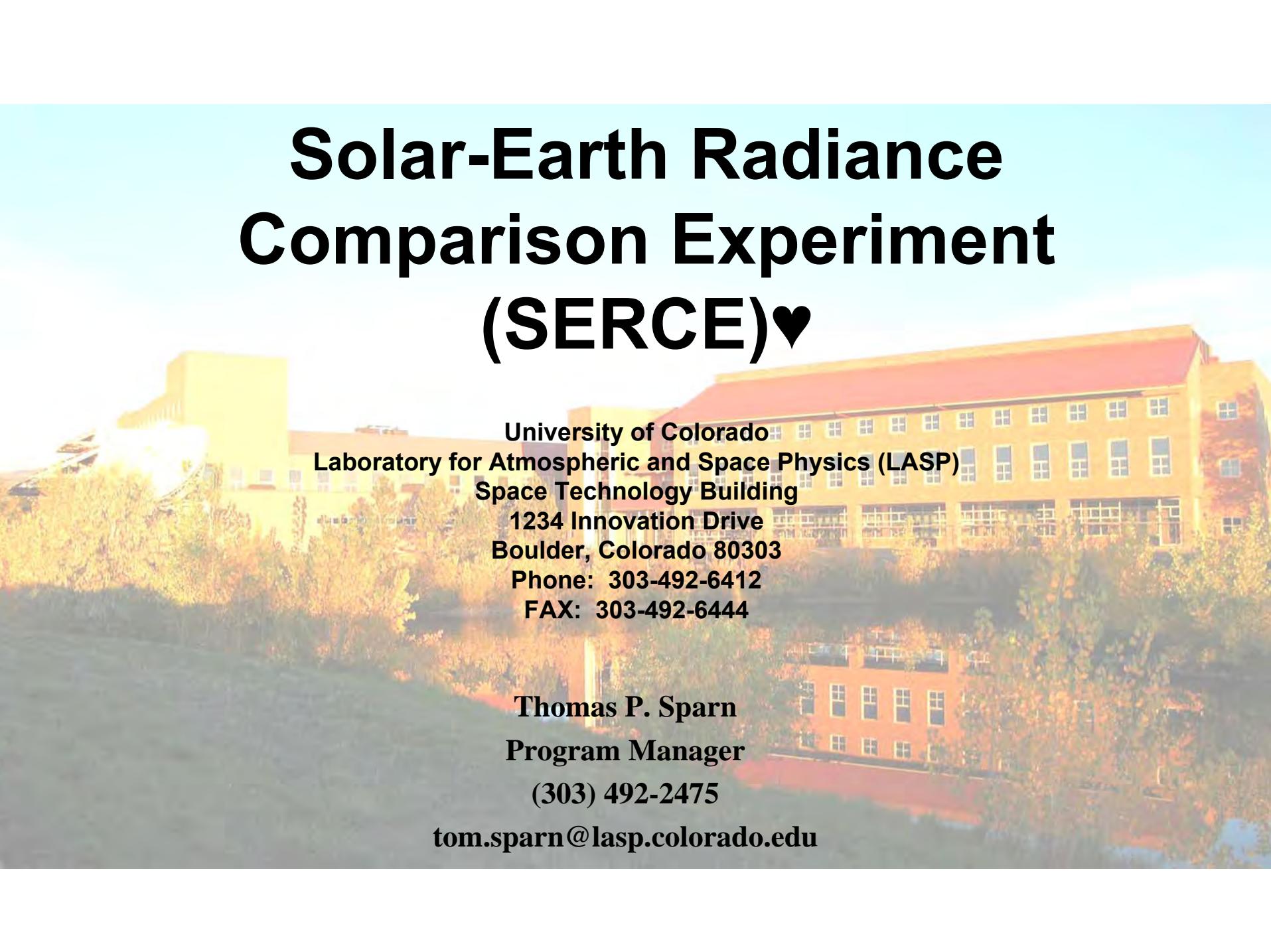


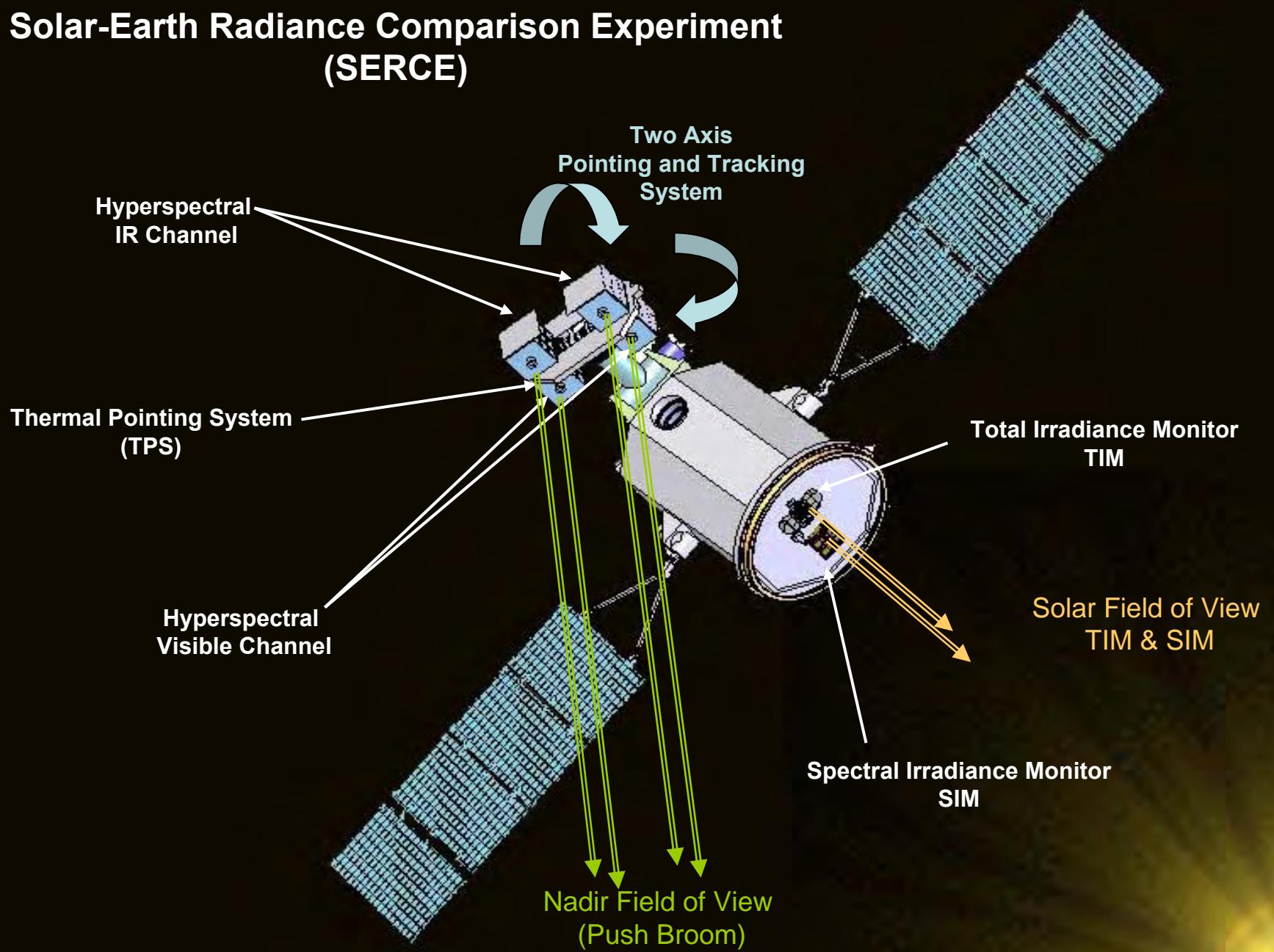
Solar-Earth Radiance Comparison Experiment (SERCE)♥



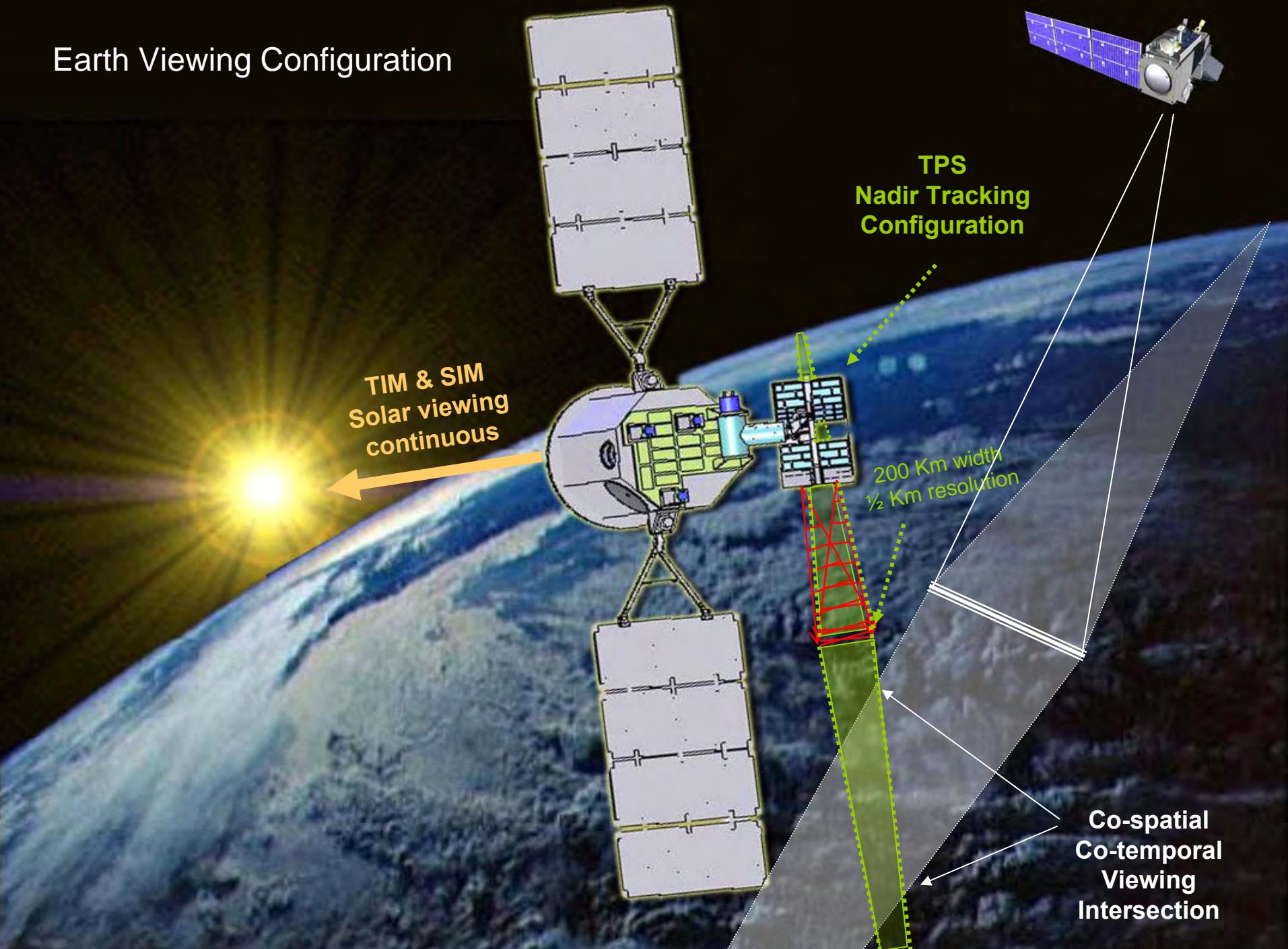
**University of Colorado
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1234 Innovation Drive
Boulder, Colorado 80303
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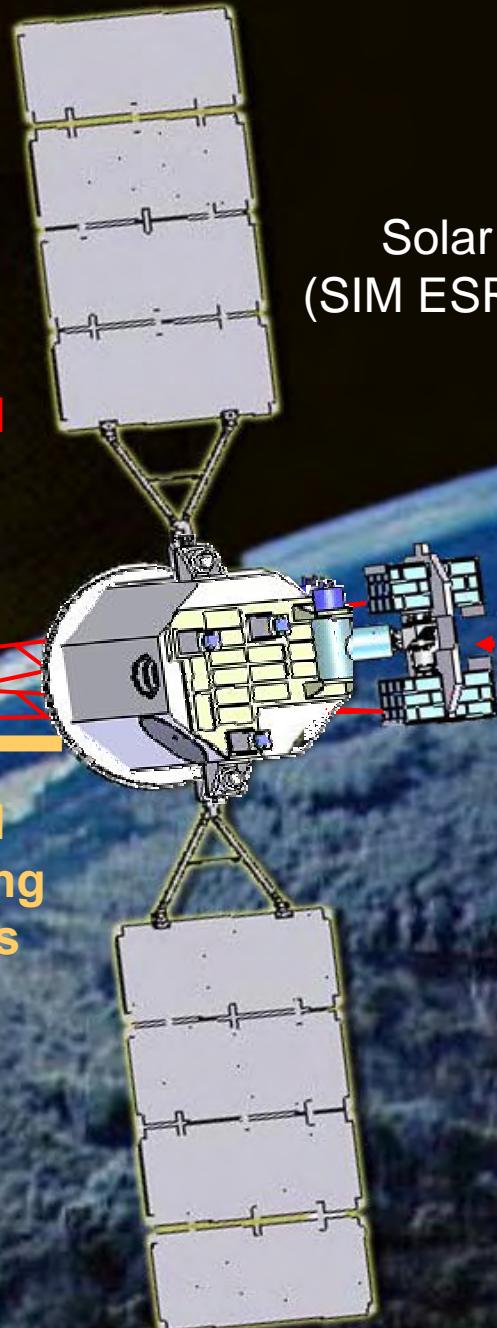
Solar-Earth Radiance Comparison Experiment (SERCE)



Earth Viewing Configuration



Solar Viewing Configuration



Co-spatial
Co-temporal

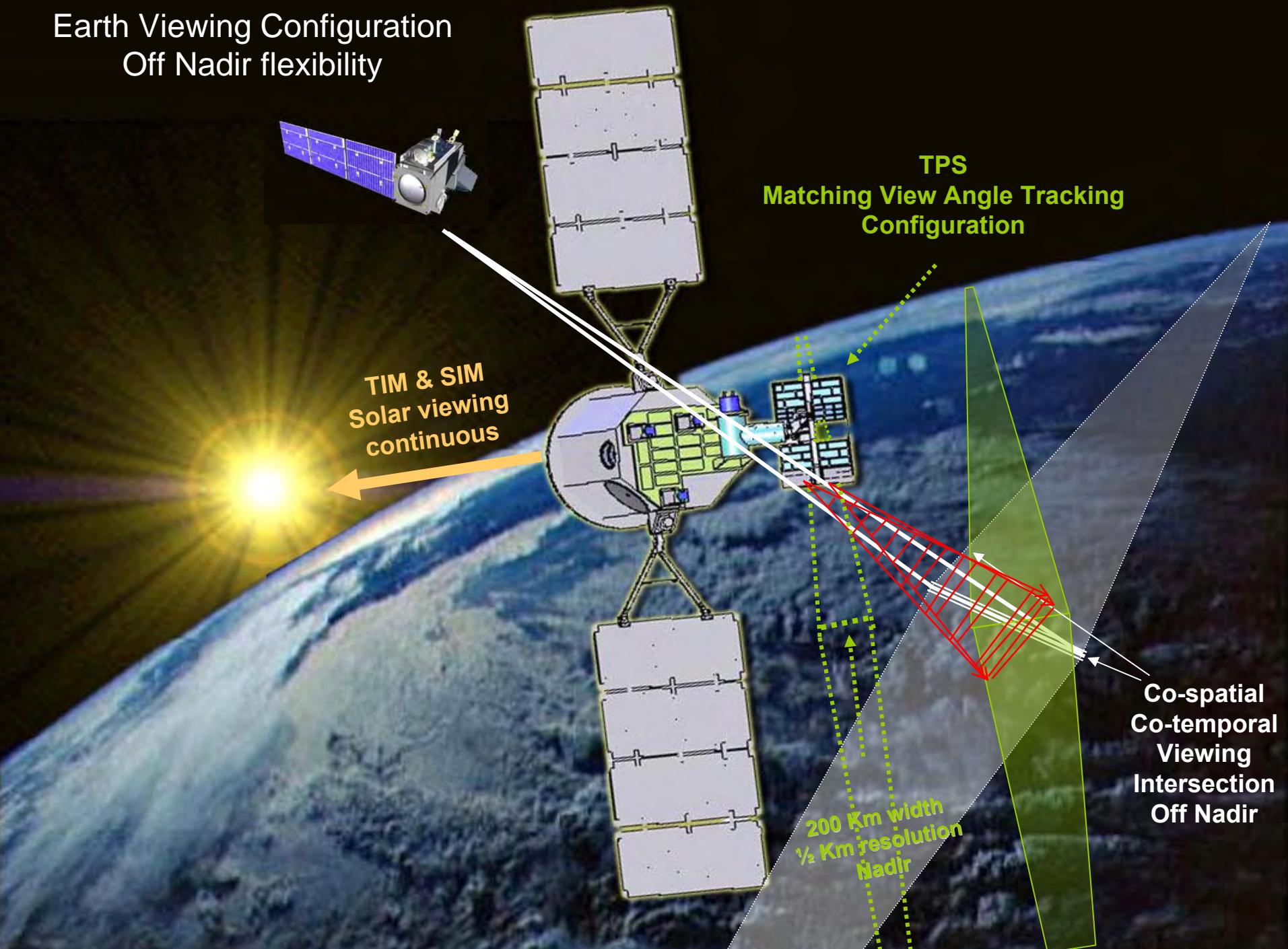
Solar Calibration Transfer
(SIM ESR → Hyperspectral Inst.)

Hyperspectral
Solar viewing
2 orbits/day

TIM & SIM
Solar viewing
continuous

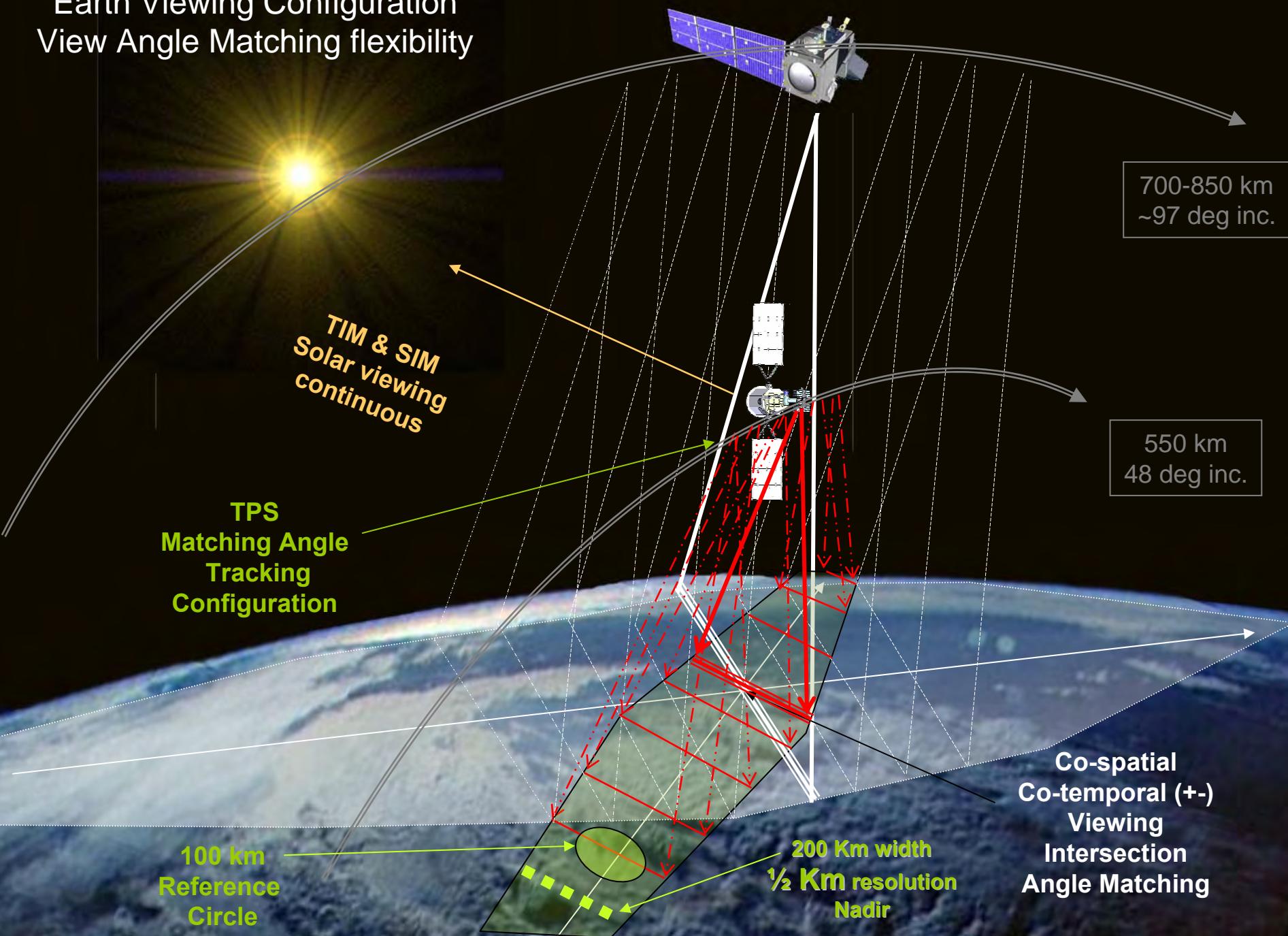
TPS
Solar pointing
Configuration

Earth Viewing Configuration Off Nadir flexibility

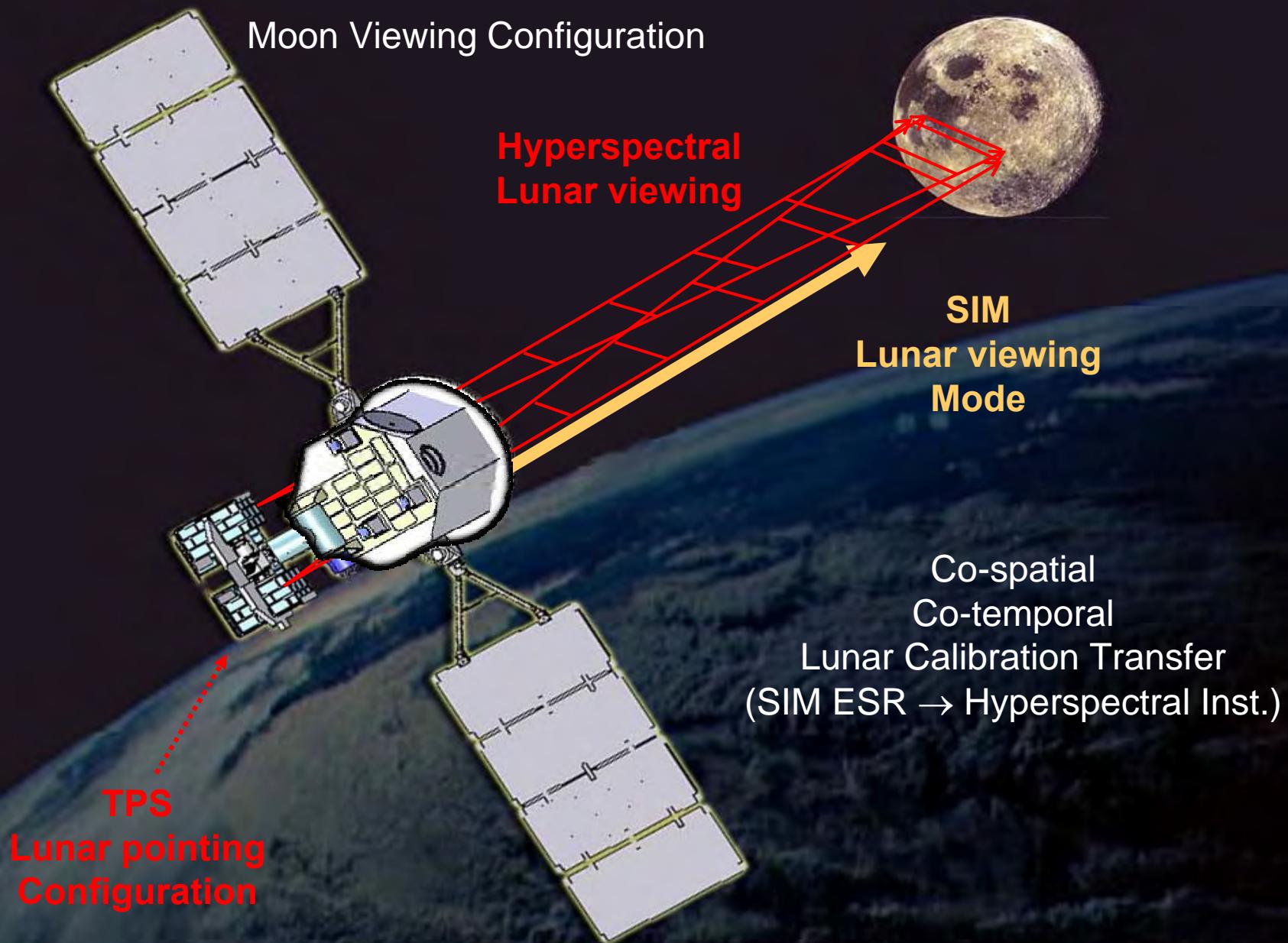


Earth Viewing Configuration

View Angle Matching flexibility

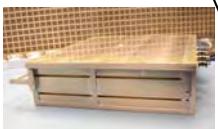


Moon Viewing Configuration



Solar Irradiance Instruments

SIM Instrument

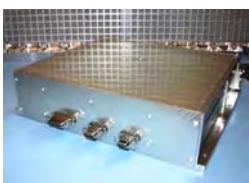


ESR Absolute Detector

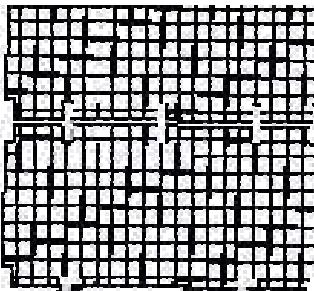
MU
Microprocessor Unit



TIM Instrument

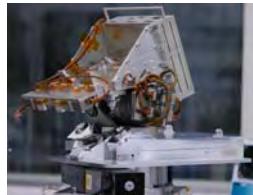


ESR Absolute Detector



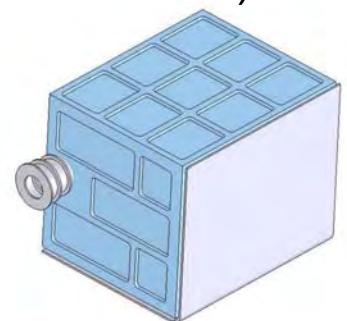
Thermal
Pointing
System

(TSIS,LDCM
Glory, TIMED)

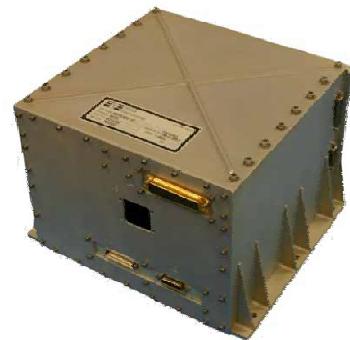


Hyperspectral Instrument

Visible/VNIR Channel
(300-1000 nm)

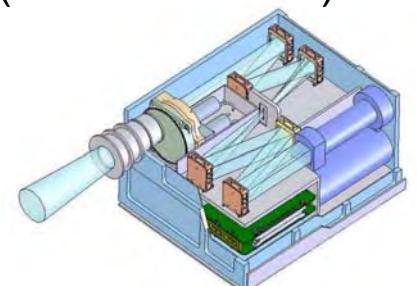


AP
Application
Processor and
Data Recorder



(SORCE, AIM
Glory)

Near-Infrared Channel
(1000-2400 nm)

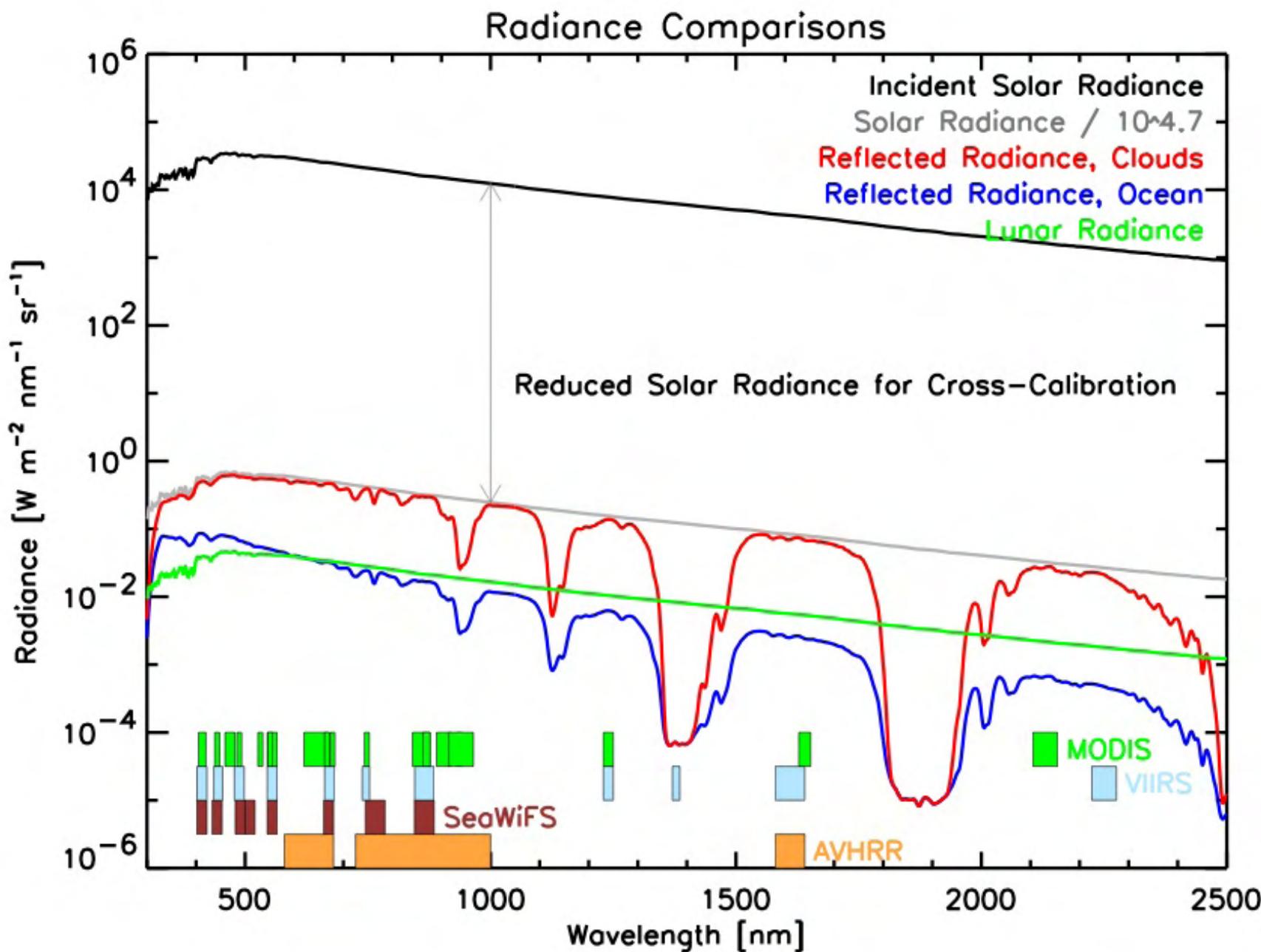


Hyperspectral Imager Requirements

Parameter	Value	Unit
Spatial Resolution	0.5	km
Spatial Range (cross-track)	200	km
Wavelength (min)	300	nm
Wavelength (max)	2400	nm
Spectral Resolution	10	nm

Calibration Transfer Uncertainties

Parameter	Uncertainty	
TSIS/SIM Accuracy with SIRCUS Calibration	0.10%	
Aperture Ratio	0.05%	
Diffraction	0.10%	
Underfilled Optics	0.10%	
Total	0.2%	WAG



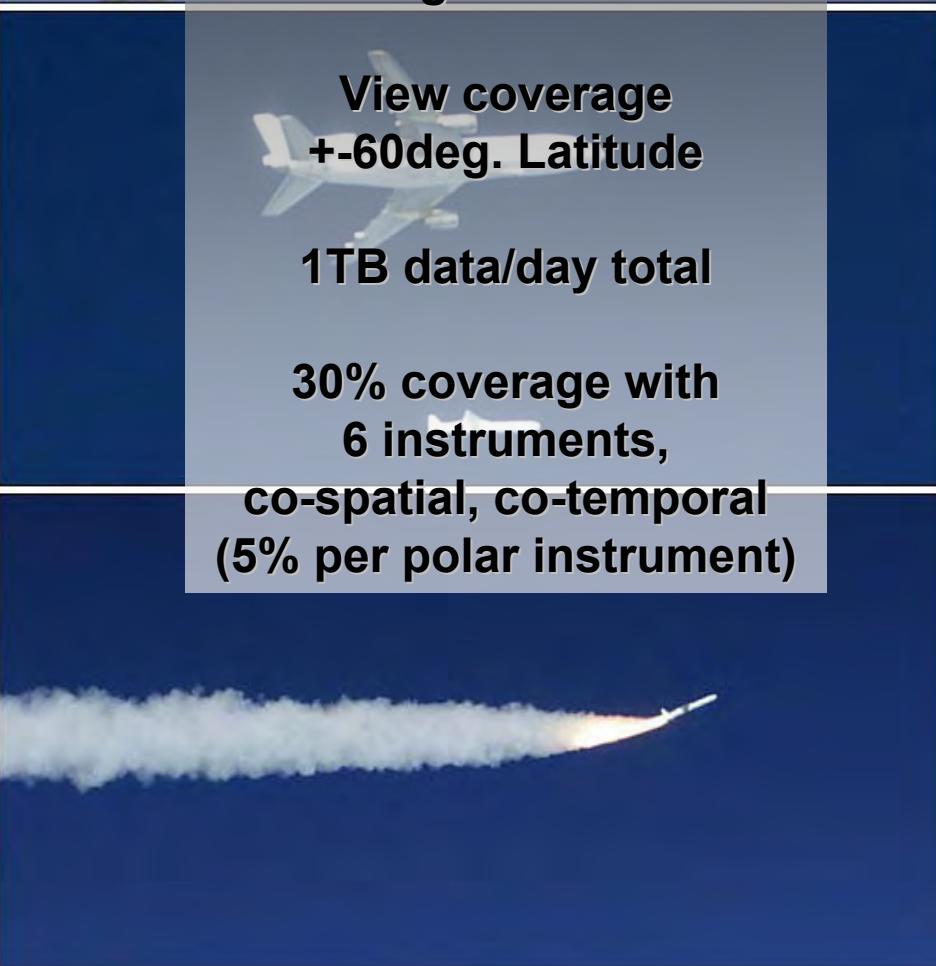


**550Km Orbit Altitude
45deg inclination**

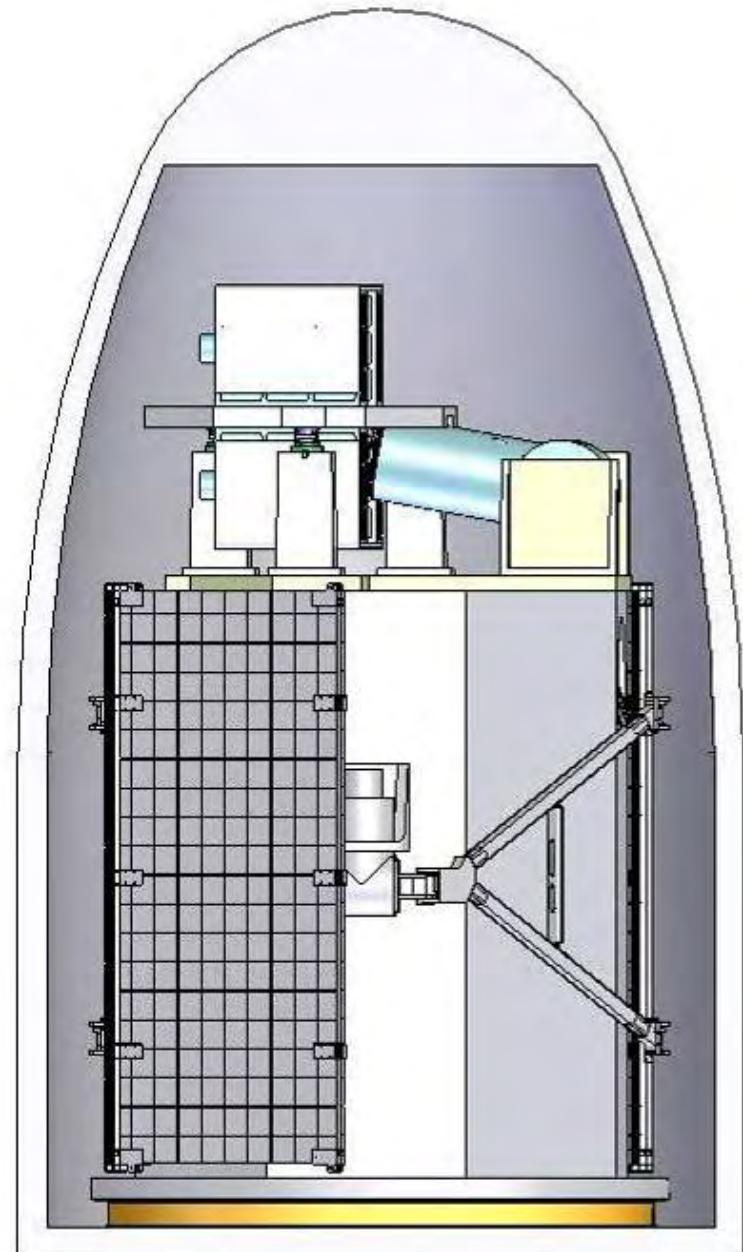
**View coverage
+60deg. Latitude**

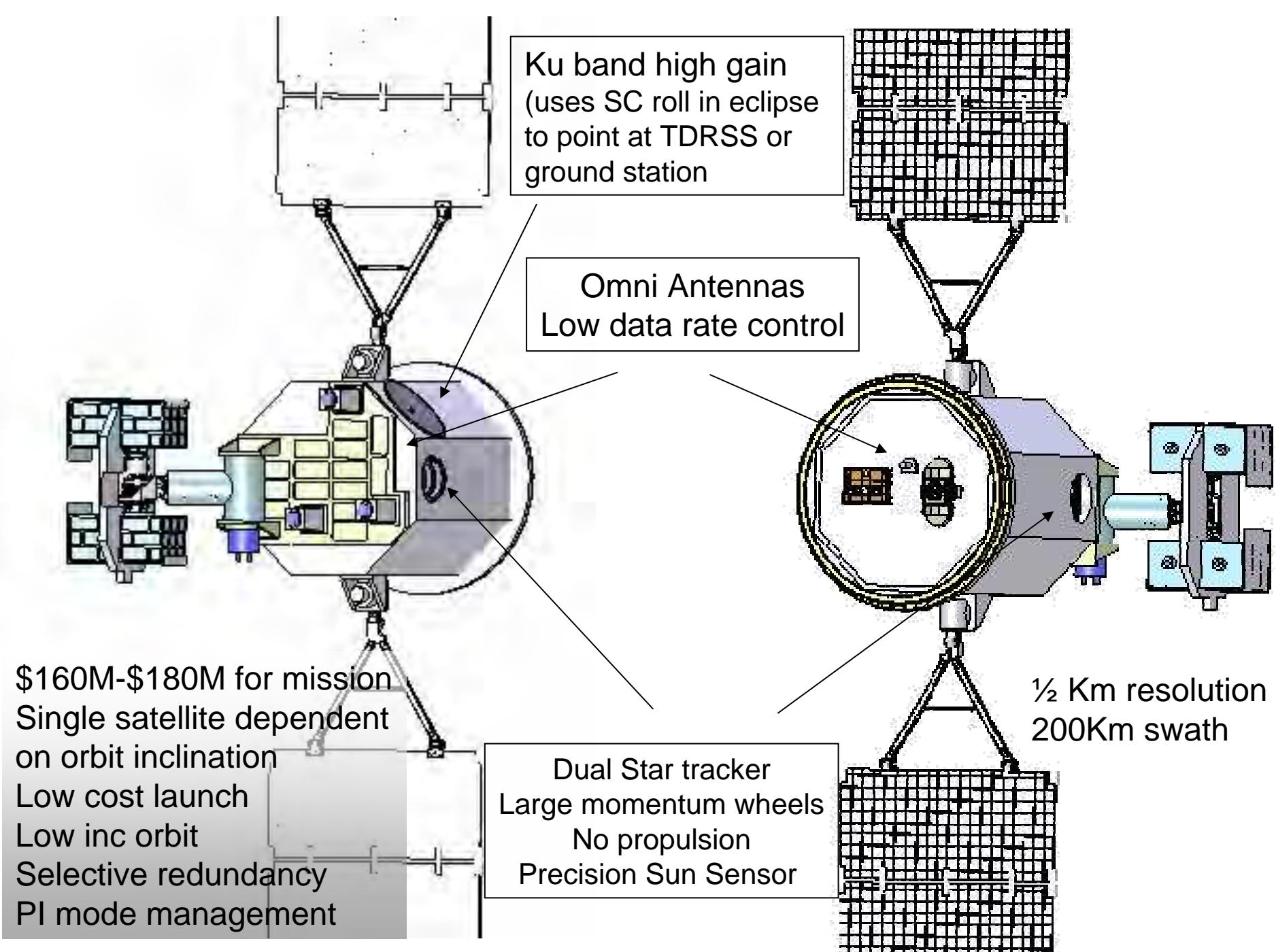
1TB data/day total

**30% coverage with
6 instruments,
co-spatial, co-temporal
(5% per polar instrument)**

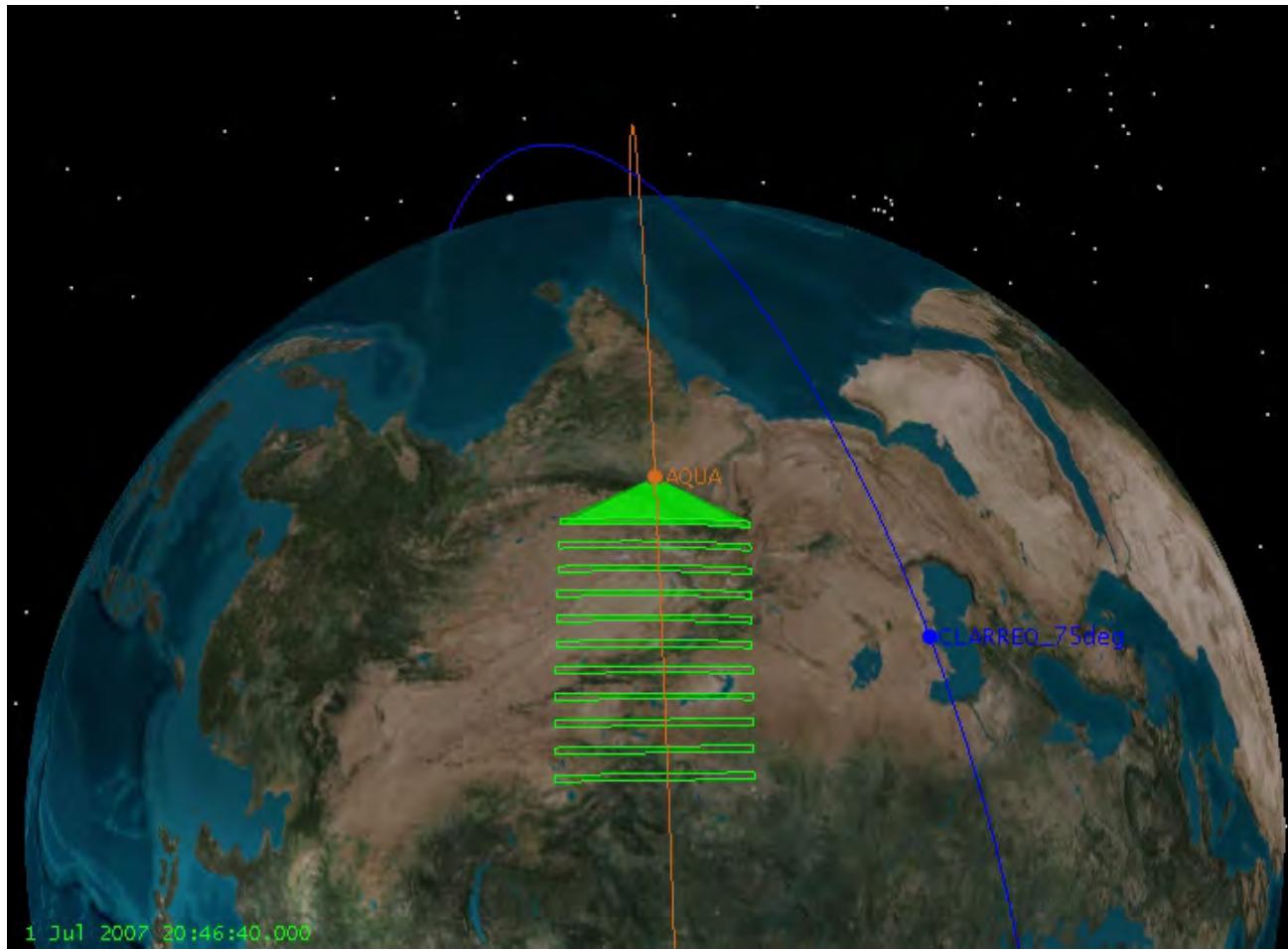


SERCE in a Pegasus fairing





Non-formation orbits viewing overlap



Provided by

Bruce Wielicki [bruce.a.wielicki@nasa.gov] Sent: Sat 7/14/2007